

# WHITE PAPER

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## Compaq Guide to PC Deployment

### Network Installation of Microsoft Windows 2000 Professional on All Compaq Deskpro EN and Deskpro EX Series of Personal Computers Using Microsoft Tools

*This paper provides a solution to the ongoing challenge of creating and deploying a corporate software image, including the operating system, hardware-specific device drivers and value-added software applications. It describes the procedure for setting up and initiating an unattended network installation of Windows 2000 Professional on Compaq Deskpro EN and Deskpro EX Series of Personal Computers.*



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**Compaq Guide to PC Deployment  
Network Installation of Microsoft Windows 2000 Professional on All  
Compaq Deskpro EN and Deskpro EX Series of Personal Computers  
Using Microsoft Tools**

North America First Edition (March 2001)

## SCOPE AND ASSUMPTIONS

This Guide provides the following information:

- PC Deployment Process overview
- Distribution Share setup for Windows 2000 Professional, including:
  - Operating system-specific configuration
  - Hardware-specific configuration
  - Value-add software configuration
- Overview of the unattended installation environment for Windows 2000 Professional
- Sample UNATTEND.TXT document
- Sample CMDLINES.TXT document
- Sample TXTSETUP.OEM document

The following assumptions are made in this paper:

- You understand how to create a network boot diskette used to access the Microsoft Windows 2000 Professional distribution share. (Refer to “Network Installation of Microsoft Windows on Compaq Deskpro EP and Deskpro EN Series of Personal Computers Using the Multi-NIC Boot Utility,” Document NA141A/1098, located on the Compaq Web site at <http://207.18.199.3/support/techpubs/whitepapers/na141a1098.html>.)
- You know what hardware must be supported.
- You can access the Web and download the appropriate SoftPAQs containing the device driver software from [www.compaq.com/support](http://www.compaq.com/support). Instructions for downloading and extracting SoftPAQs are provided at [www.compaq.com/support](http://www.compaq.com/support).
- The deployment team has access to the *Microsoft Windows 2000 Professional Resource Kit*.
- Each client computer has a licensed copy of Windows 2000 Professional.

## PROCESS OVERVIEW, CONVENTIONS, OTHER DOCUMENTATION

### High level overview of the process

The following steps outline the network installation process:

1. Copy the Windows 2000 Professional operating system (and associated Service Packs if applicable) to a designated location on the server.
2. Create the unattended setup directory structure as shown in Appendix A of this White Paper.
3. Download the appropriate SoftPAQs and run them to extract device drivers into the correct folders (see hardware component sections of this white paper for more detailed information).
4. Modify the UNATTEND.TXT file as required.
5. Set up a network share for the operating system, device drivers, and other software to be installed.
6. Boot client computer to the shared network directory.
7. Perform a Remote ROM Flash (optional). Refer to Appendix E for more details.

8. Install the operating system, device drivers and other software from the network.

### Conventions

*Distribution share* refers to the combination of the operating system, 3<sup>rd</sup> party device drivers and any value-add software in a centralized location.

*servername* refers to the name of the server containing the distribution share.

*sharename* refers to the name of the share established for accessing the distribution share on the server.

### References to Microsoft Documentation

Use the following resources to help you deploy Microsoft Windows 2000 Professional on Compaq Deskpro Series client systems:

- The *Microsoft Windows 2000 Professional Resource Kit*. This is very useful for understanding the deployment strategies described in this paper. It gives specific information on the options used to automate the installation of Windows 2000 Professional.
- Microsoft's Knowledge Base, located on the Web at <http://support.microsoft.com/support>, contains articles describing known installation issues and solutions.
- Microsoft Windows 2000 Professional Deployment Resource documents, located at <http://www.microsoft.com/windows2000/library/resources/reskit/default.asp>.
- Hardware and Software Compatibility List, located on the Web at <http://www.microsoft.com/windows2000/upgrade/compat>.

### Hard Drive and Hardware Preparation

You should make file system decisions **before** installing the operating system. Microsoft Windows 2000 Professional supports FAT16, FAT32 and NTFS.

Ensure that all factory-installed Compaq hardware is properly connected in each target computer. Refer to the hardware documentation included with all Compaq Deskpro Series computers if you have any questions regarding how the hardware is installed in the system.

## DISTRIBUTION SHARE SETUP – WINDOWS 2000 PROFESSIONAL OPERATING SYSTEM

Copy the entire \I386 directory and its subdirectories from the Windows 2000 Professional CD to the hard disk of the server from which Windows 2000 Professional will be installed. Some modifications may need to be made to the distribution directory because not all target systems will require every directory of a distribution directory structure (Refer to Appendix A for layout of the directory structure). From the target PC, establish a connection to the distribution share and from within the \I386 directory, use the following command to invoke the installation process:

```
WINNT /U:\\servername\sharename\I386\$oem$\UNATTEND.TXT  
/S:\\servername\sharename\I386
```

Where

**/U[:]** refers to an unattended installation using an optional script file (requires /s)

**/S[:]** refers to the source location of the Windows 2000 Professional files. For example:

```
WINNT.EXE /u:n:\w2k\I386\$oem$\UNATTEND.TXT /s:n:\w2k\I386
```

---

**NOTE:** For a complete listing of WINNT.EXE and WINNT32.EXE commands, see Windows 2000 Help. Or, at a command prompt, switch to the \i386 folder on the Windows 2000 product CD, and then type: `winnt /?` or `winnt32 /?`

---

## SERVICE PACK 1

To add the files from the Service Pack 1 release to the unattended installation, complete the following steps:

1. Copy the entire \I386 directory from the Windows 2000 Professional Service Pack 1 CD onto the distribution share.

---

**NOTE:** Since an \I386 folder already exists on the distribution share, you may want to create a new folder for these files (e.g., \W2KSP1).

---

2. Move the \W2KSP1 directory into the \\servername\sharename\I386\\$oem\$\\$1 directory. This will copy this folder down to the local hard drive during the installation process and it will remain there following setup.
3. Insert the following line in the [GUIRunOnce] section of the UNATTEND.TXT file:

```
[GUIRunOnce]  
SP1=" C:\W2ksp1\i386\update\UPDATE.EXE -u -z -n -o"
```

**Optional:** Instead of using the UNATTEND.TXT file, the CMDLINES.TXT file can be used with the following syntax:

```
[Commands]  
" C:\W2ksp1\i386\update\UPDATE.EXE -u -z -n -o"
```

## MACHINE-SPECIFIC INFORMATION

There are no machine-specific items to configure for Windows 2000 Professional.

## INSTALLING PLUG AND PLAY DRIVERS

Since Windows 2000 supports Plug and Play detection, it is relatively easy to install third party drivers for non-boot devices (Audio, Video, NIC, Chipset, etc.) Refer to the Driver Signing Policy in Appendix B for more information on how the Windows 2000 operating system selects the optimal driver for any Plug and Play device.

### Steps for integrating Plug and Play Devices

1. In the `\$OEM$` subfolder of the distribution share, create a folder (and/or subfolders) for any Plug and Play drivers and their associated files (catalog, INF and drivers), for example:

```
\\servername\sharename\I386\$oem$\$1\PnPDvrs
```

---

**NOTE:** The *PnPDvrs* folder can be renamed to reference the specific devices being installed. For example, you could create a `\Drivers\NIC` folder for network card drivers and a `\Drivers\AUDIO` for sound card drivers.

---

2. Modify the UNATTEND.TXT file by adding an OEMPNPDRIVERSPATH parameter to point to the driver files. Using the example from above the following entry would need to be created:

```
[Unattended]
OemPreinstall = Yes
OemPnPDriversPath = "PnPDvrs\Nic;PnPDvrs\Audio"
```

---

**NOTE:** Setup will add the following in the registry:

```
%systemdrive% to each of the folder names
```

```
path for each subfolder to the Plug and Play device search path
```

---

3. Set the OemPreinstall=YES parameter in the [Unattended] section of the UNATTEND.TXT.

## INTEGRATING VIDEO DRIVERS

### General Process

1. Download each required SoftPAQ to its own directory. For SoftPAQs containing Plug and Play drivers, execute the SoftPAQ with the `-flat` switch as a command line option. This will extract the SoftPAQ out into a flat (single) directory.
2. Copy all of the driver files (INF, CAT and SYS files) from the flat directory into the distribution share directory (i.e. `\\servername\sharename\I386\$oem$\$1\PnPDvrs`).
3. Refer to the *Installing Plug and Play Drivers* section above to complete the setup for the driver.

## INTEGRATING NETWORK INTERFACE CARD (NIC) DRIVERS

### General Process

1. Download each required SoftPAQ to its own directory. For SoftPAQs containing Plug and Play drivers, execute the SoftPAQ with the *-flat* switch as a command line option. This will extract the SoftPAQ out into a flat (single) directory.
2. Copy all of the driver files (INF, CAT and SYS files) from the flat directory into the distribution share directory (i.e. \\servername\sharename\I386\%\$oem%\\$1\PnPDrivers).
3. Refer to the *Installing Plug and Play Drivers* section above to complete the setup for the driver.

## INTEGRATING AUDIO DRIVERS

### General Process

1. Download each required SoftPAQ to its own directory. For SoftPAQs containing Plug and Play drivers, execute the SoftPAQ with the *-flat* switch as a command line option. This will extract the SoftPAQ out into a flat (single) directory.
2. Copy all of the driver files (INF, CAT and SYS files) from the flat directory into the distribution share directory (i.e. \\servername\sharename\I386\%\$oem%\\$1\PnPDrivers).
3. Refer to the *Installing Plug and Play Drivers* section above to complete the setup for the driver.

## INTEGRATING CHIPSET DRIVERS

### General Process

1. Download each required SoftPAQ to its own directory. For SoftPAQs containing Plug and Play drivers, execute the SoftPAQ with the *-flat* switch as a command line option. This will extract the SoftPAQ out into a flat (single) directory.
2. Copy all of the driver files (INF, CAT and SYS files) from the flat directory into the distribution share directory (i.e. \\servername\sharename\I386\%\$oem%\\$1\PnPDrivers).
3. Refer to the *Installing Plug and Play Drivers* section above to complete the setup for the driver.

### Specific Errata

#### Intel 8xx Chipset Support

1. Download each required SoftPAQ to its own directory. For SoftPAQs containing Plug and Play drivers, execute the SoftPAQ with the *-flat* switch as a command line option. This will extract the SoftPAQ out into a flat (single) directory.
2. If in Windows, exit to a DOS box and run the setup file with the *-a -a* switches (example: "C:\chipset\SETUP.EXE -a -a"). These switches will layout all the chipset INF files in the "C:\Program Files\Intel\InfInst" directory. All the INF's will be broken down by chipset architecture and OS type.
3. Copy all of the required driver files (INF, CAT and SYS files) from the flat directory into the distribution share directory (i.e. \\servername\sharename\I386\%\$oem%\\$1\PnPDrivers).

4. Refer to the Installing Plug and Play Drivers section above to complete the setup for the driver.

### Integrating Mass Storage Drivers

Use the following information to install mass storage controllers not included with the Windows 2000 operating system.

1. Create a \TEXTMODE subfolder in the distribution share: \I386\%oem%\Textmode
2. Copy the files supplied by the device vendor to the \I386\%oem%\Textmode folder
3. Copy or create a TXTSETUP.OEM file in the \I386\%oem%\Textmode directory. This file contains descriptions of all the OEM-supplied drivers listed in this section and includes instructions on how to install them. This file must exist if the [OEMBootFiles] section exists in the UNATTEND.TXT file.
4. Add the following lines to the UNATTEND.TXT file:

```
[Unattended]
ComputerType = "HALDescription", OEM
```

```
[OEMBootFiles]
OEMHal.sys
Txtsetup.oem
```

---

**NOTE:** TXTSETUP.OEM and all files listed in it (drivers and/or .INF files) must also be listed in the [OEMBootFiles] section of the UNATTEND.TXT file.

---



## APPENDIX A

### Unattended Setup Environment

To install Windows 2000 Professional on multiple computers across a network, a Distribution Share directory needs to be created. Distribution directories are the central location of all files needed for a network install, including all Original Equipment Manufacturer (OEM) additions. Following is an example of the directory structure of a Distribution Share:

```
\1386
  \soem$
    \Textmode
    \$$
    \ $1
    \ $1\Pnpdvrs
    \drive_letter
```

### Distribution Directory Structure

#### *\$oem\$*

This directory contains the subdirectories needed to support an unattended installation of applications, drivers, etc. not included on the Windows 2000 Professional retail CD. This directory can also include the optional file CMDLINES.TXT, which contains a list of commands to be run during GUI Mode Setup. (Refer to the Windows 2000 Professional Resource Kit for detailed information).

#### *\$oem\$\Textmode*

This directory contains the hardware-dependent files that Setup Loader and text-mode Setup install on the destination computer during the Text Mode portion of the Windows 2000 Professional install. The files for SCSI, Keyboard, Video or Pointing Device Drivers or HALs that are not included with Windows 2000 Professional retail version must appear in this directory. This directory should also contain a standard TXTSETUP.OEM file. This file contains pointers to all the files required to install these components. Only one TXTSETUP.OEM file can exist in this directory.

---

**NOTE:** TXTSETUP.OEM and all files listed in it (HALs and drivers) must also be listed in the [OEMBootFiles] section of the UNATTEND.TXT file.

---

#### *\$oem\$\\$\$*

This directory contains the system files, either new or replacements for retail files, that are copied to the various subdirectories when Windows 2000 Professional is installed. The structure of this directory must match the structure of a standard Windows 2000 Professional installation, where `\$oem$\$$` matches `%Windir%`, `\$oem$\$$\System32` matches `%Windir%\System32`, and so on. For example:

```
\1386\$oem$\$$\system32\drivers\myscsi.sys
```

would be copied to:

```
Winnt\system32\drivers\myscsi.sys
```

### *\$oem\$\\$1*

This folder is equivalent to the %systemdrive% environment variable. For example, if the operating system is installed on drive C, \ \$oem\$\\$1 would refer back to drive C. The use of this variable makes it possible to rearrange drive letters without creating errors in applications that point to a hard-coded drive letter.

### *\$oem\$\\$1\PnPdrvrs*

This folder contains additional Plug and Play drivers not included with the Windows 2000 Professional retail CD. The PnPdrvrs name can be replaced by any eight-character or less name.

---

**NOTE:** The \$oem\$\\$1\PnPdrvrs folder replaces the \DISPLAY and \NET folders used in the Microsoft Windows NT 4.0 distribution share installation.

---

### *\$oem\$\drive\_letter*

This directory contains a subdirectory structure that is copied during Text Mode Setup to the root of the corresponding drive in the target computer. Any subdirectory of this directory will be copied to the local (destination) hard drive and will remain there following the setup process.

## Using an Answer File (UNATTEND.TXT)

Answer files are text files that automate user responses to questions during the installation process. The answer file is specified with the /U:<answer file> option with the **winnt** or **winnt32** command. Any legal file name can be used for an answer file in place of UNATTEND.TXT. An answer file can be created by editing a copy of the UNATTEND.TXT included on both the Windows 2000 Professional CD and the Windows 2000 Professional Resource Kit. Refer to the Resource Kit for more information on creating an answer file.

## Using CMDLINES.TXT

This file resides in the \$OEM\$ directory and is used for installing files included in the \$OEM\$ subdirectories, including those directories copied down to the local hard drive. By listing the installation command within the CMDLINES.TXT file, the files will get installed automatically at the end of the Setup process. **IMPORTANT:** The installation command must be surrounded by double quotation marks. **ALL** machines using the distribution share will execute any command entered in this file, even if the command doesn't apply for a particular system (i.e., installing a video driver).

## APPENDIX B

### DRIVER SIGNING POLICY AND PLUG AND PLAY DEVICE DRIVERS

If you intend to use any updated drivers, you must first verify that they have a valid signature. If they do not, the driver being installed will depend on:

- § The driver signing policy you indicate in your answer file.
- § The availability of a compatible signed driver that ships with the operating system.

#### DriverSigningPolicy

Specifies how non-signed drivers are processed during unattended Setup. Signed drivers have gone through the Microsoft driver testing and signing process to ensure they are Windows 2000 compatible.

- § **Block** Setup does not install the non-signed device driver.
- § **Warn** Setup stops the installation and prompts the user for input before accepting the non-signed device driver.
- § **Ignore** Setup continues even if the driver is not signed.

---

**NOTE:** Refer to Appendix C for examples of how to set these options in the UNATTEND.TXT.

---

---

**IMPORTANT:** Microsoft strongly advises against using DriverSigningPolicy = Ignore unless you have fully tested the device driver in your environment and are sure that it works properly. Using non-signed drivers increases the risk of device driver problems that can affect the performance or stability of your computer.

If you are using DriverSigningPolicy = Ignore and you attempt to install a newer, unsigned copy of a driver that is protected by Windows 2000, the policy level is automatically updated to Warn.

---

For the most up-to-date list of supported hardware, see the Hardware Compatibility List by visiting the Microsoft Web site at: <http://www.microsoft.com/>

Your Windows 2000 CD includes a copy of this list (*drive:\Support\HCL.TXT*) that was accurate as of the date Windows 2000 was released.

### TIPS FOR HARDWARE PREINSTALLATION

The following information is provided to help ensure that the correct Plug and Play device driver support is selected properly for the devices in your computers.

#### PnP Devices

If you are installing an updated Windows 2000 driver for a device, but find that the new driver is not used when Windows 2000 installation is complete, you should:

- § Verify that the driver has a valid signature.
- § Check the ranking of the new driver. For more information on driver ranking, see “How Does Windows 2000 Select the Correct Driver” below.

- § Check the SETUPAPI.LOG for information on how Windows 2000 processed the driver.
- § To view the SETUPAPI.LOG file, go to %windir%\SETUPAPI.LOG. To expand the SETUPAPI.LOG file to provide the most information, see “Increasing the Verbosity of the SETUPAPI.LOG” in Appendix F.

For additional information about SETUPAPI.LOG, see *the Microsoft Windows 2000 Device Driver Kit* or visit the Windows Driver and Hardware Development Web site at:  
<http://www.microsoft.com/hwdev/>

## How Does Windows 2000 Select the Correct Driver?

To determine which driver is the best one for a device, Windows 2000 ranks the drivers and takes the driver with the lowest rank. The lower the rank, the better the match to the device. If multiple drivers have the same rank, the driver with the newest date is chosen.

To determine the rank, Windows 2000 compares the device’s Hardware IDs and Compatible IDs with the IDs listed in the Models section of the .INF file. The best match for a device is one that has a Hardware ID match for the first choice Hardware ID specified in the device.

If there is no Hardware ID match:

1. The device’s Hardware ID is compared with Compatible IDs listed in the .INF file.
2. The device’s Compatible IDs are compared with the Hardware IDs in the .INF file.
3. The device’s Compatible IDs are compared with the Compatible IDs listed in the .INF file.

The match in step 3 has the highest rank for the device and, thus, is the worst match.

Generally speaking, it is not important to know the exact rank number of your device because this may change in future releases. However, it is important to know that the lower the rank, the better the match of the driver to the device. A driver with the rank of 0 is the best match.

If the ranks for device drivers are equal, Windows 2000 compares the drivers’ dates, which are located in the DriverVer entry of the .INF file. If an .INF file is not digitally signed, then its DriverVer entry is ignored and the date is considered 00/00/0000, or worse than any other date.

For more information about how Windows 2000 ranks drivers, see *the Microsoft Windows 2000 Device Driver Kit* or visit the Windows Driver and Hardware Development Web site at:  
<http://www.microsoft.com/hwdev/>

## APPENDIX C

### UNATTEND.TXT (Sample file)

```
; Microsoft Windows 2000 Professional, Server, Advanced Server and Datacenter
; (c) 1994 - 1999 Microsoft Corporation. All rights reserved.
;
; Sample Unattended Setup Answer File
;
; This file contains information about how to automate the installation
; or upgrade of Windows 2000 Professional and Windows 2000 Server so the
; Setup program runs without requiring user input.
```

#### [Unattended]

```
Unattendmode = FullUnattended
OemPreinstall = YES
ComputerType = "Adaptec AIC-78xx PCI SCSI Controller", OEM
DriverSigningPolicy= Warn
ExtendOEMPartition = 0
FileSystem = LeaveAlone
OemFilesPath = "\\servername\sharename\l386"
OemPnPDriversPath = "drivers\audio;drivers\nic"
NtUpgrade = NO
Win9xUpgrade = NO
TargetPath = WINNT
OverwriteOemFilesOnUpgrade = NO
OemSkipEula = YES
```

#### [GuiUnattended]

```
AdminPassword = *
Autologon = Yes
OemSkipWelcome = 1
OEMSkipRegional = 1
TimeZone = "(GMT-06:00) Central Time (US & Canada)"
```

#### [UserData]

```
FullName = "Your User Name"
OrgName = "Your Organization Name"
ComputerName = *
ProductID = "xxxxx-xxxxx-xxxxx-xxxxx-xxxxx"
```

#### [Display]

```
BitsPerPel = 16
XResolution = 800
YResolution = 600
Refresh = 60
```

#### [OEMBootFiles]

```
Txtsetup.oem
Aic78xx.sys
```

#### [Networking]

```
InstallDefaultComponents = YES
```

**[Identification]**

JoinWorkgroup=WORKGROUP  
JoinDomain=  
CreateComputerAccountDomain=  
DomainAdmin=  
DomainAdminPassword=

**[OEM\_Ads]**

Background=BACKGRND.BMP

**[Data]**

UseBIOSToBoot=1

**[GUIRunOnce]**

WELCOFF="c:\winnt\regedit /s c:\WELC\_OFF.REG"  
SP1="C:\W2ksp1\i386\update\UPDATE.EXE -u -z -n -o "

**APPENDIX C**

**CMDLINES.TXT (Sample File)**

**[Commands]**

"C:\W2ksp1\i386\update\UPDATE.EXE -u -z -n -o"

"C:\scg\SETUP.EXE -s"

".\regedit /s POWER.REG"

**APPENDIX D**

**TXTSETUP.OEM (Sample File)**

**[COMPAQ]**

**[Disks]**

d1= "Adaptec 7800 Family Manager Set", \disk1, \

**[Defaults]**

scsi= OEMSCSI

**[scsi]**

a78NT40= "Adaptec AIC-78xx PCI SCSI Controller"

**[Files.scsi.a78NT40]**

driver= d1, aic78xx.sys, AIC78XX

inf= d1, aic78xx.inf



**APPENDIX E**

**Remote ROM Flash**

The Remote ROM Flash Utilities SoftPAQ contains utilities to update the system ROM and set the administrator password for setup without interaction. These can be used either by integrating them into the boot diskette used to set up new machines or in conjunction with remote setup utilities such as LCM. For instructions on using these utilities refer to the README.TXT file contained in the SoftPAQ. The Remote ROM Flash Utilities SoftPAQ can be found on both the Software Support CD and on the Web at <http://www.compaq.com/support/files/desktops/us/index.html> located with software for the machine under the "ROMPaqs and System Software" heading.

## APPENDIX F

### Additional Enhancements for Distributed Share Installations

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**NOTE:** For additional information on any of these features, reference the Microsoft Windows 2000 Professional Deployment Resource documents located at <http://www.microsoft.com/windows2000/library/resources/reskit/default.asp>

---

#### Automatically Logging on After an Unattended Installation

##### AutoLogon

Value: Yes | No

Sets up the computer to automatically log on once with the Administrator account if set to Yes. The default behavior is No. The key is not valid on upgrades.

Example:

```
[GUIUnattended]
AutoLogon = YES
```

---

**NOTE:** If you specify a password by using AdminPassword, that password is used when you automatically log on. After the installation is complete, the password is deleted from the copy of the answer file left on the computer.

If AdminPassword = \* (is blank) and AutoLogon = Yes, the computer logs on only one time. However, if AdminPassword = <password>, the computer logs on repeatedly and the non-blank password is saved in the registry.

---

#### Suppressing the Welcome Screen When Logging into Windows 2000 Professional

This feature provides the capability to automatically suppress the Welcome screen when logging into Windows 2000 Professional.

1. Using any text editor, create a file named WELC\_OFF.REG and place the file in the \\servername\sharename\I386\%oem%\C directory of the distribution share
2. Enter the following information in the file:

```
Windows Registry Editor Version 5.00
[HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Tips]
"DisplayInitialTipWindow"=dword:00000000
"Show"=hex:00,00,00,00
"Next"=hex:03,00
```

3. To insert the information into the registry, add the following lines to the UNATTEND.TXT file:

```
[GUIRunOnce]
WELCOFF="c:\winnt\regedit /s c:\WELC_OFF.REG"
```

## Using [GuiRunOnce] to Execute Commands After Logging into Windows 2000 Professional

This feature allows Windows 2000 Professional to automatically execute additional commands (i.e. batch files, Setup installs, etc.) upon logging into the operating system.

### [GuiRunOnce]

This section contains a list of commands to be executed the first time a user logs on to the computer after GUI-mode Setup has completed. Each line specifies a command to be executed by the GuiRunOnce registry entry. For example:

To install	Add this line to [GuiRunOnce]
Domain Controller	" <b>dcpromo/answer:</b> <answer file>"
Cluster Service	"%windir%\cluster\cluscfg.exe -unattend"

---

**Important** Each command line must be in quotes.

---

Example:

```
[GuiRunOnce]
WELCOFF="c:\winnt\regedit /s c:\WELC_OFF.REG"
SP1="C:\W2ksp1\i386\update\UPDATE.EXE -u -z -n -o "
```

Commands run using the GuiRunOnce key run in the context of the currently logged in user. If the user does not have the permissions necessary to run the command completely, then the application fails. Because this is run in the context of a logged-in user rather than as a service, the registry entries that the application creates are written for the current user rather than the default user. (Default user registry settings are propagated to new users.) If you want any settings and updates to show only for the specifically logged in user, then this may be appropriate. Otherwise, Cmdlines.txt is a better approach to running commands and installing applications because it runs as a system service.

## Increasing the Verbosity of the SETUPAPI.LOG

If you need more information than the SETUPAPI.LOG currently provides in its default setting to help with diagnosing driver selection issues, you can increase verbosity of the logging by using the following procedures.

### To increase the verbosity of SETUPAPI.LOG during GUI-mode Setup

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**NOTE:** This procedure assumes that you are installing Windows 2000 to D:\Winnt and have an existing "safe build" of Windows 2000 on another partition.

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1. Stop the Setup process during the first boot (after Text-mode Setup, before GUI-mode Setup). If the system is already in GUI-mode Setup, quit and reboot.
2. Boot into the safe mode.
3. Go to the registry hives (files) in D:\Winnt\System32\config and find SOFTWARE.SAV.
4. Run Regedt32. In the Registry Editor, in the HKEY\_LOCAL\_MACHINE on Local Machine dialog box, click HKEY\_LOCAL\_MACHINE.

5. On the **Registry** menu, click **Load Hive**.
6. In the **Load Hive** dialog box, go to D:\Winnt\System32\config\ and click **SOFTWARE.SAV**. When prompted for a key name, type **\_SW.SAV**.
7. In the Registry Editor, in the **HKEY\_LOCAL\_MACHINE on Local Machine** dialog box, under **HKEY\_LOCAL\_MACHINE**, click **\_SW.SAV**. Find the following key:  
  
HKEY\_LOCAL\_MACHINE\\_SW.SAV\Microsoft\Windows\CurrentVersion\Setup
8. On the **Edit** menu, click **Add Value** and provide the following:  
  
Value Name: LogLevel  
Data Type: REG\_DWORD
9. Then click **OK**.
10. For this value, set the Data as 0xFF00 or 0xFFFF to enable full verbose logging.
11. In the **HKEY\_LOCAL\_MACHINE on Local Machine** dialog box, under **HKEY\_LOCAL\_MACHINE**, click **\_SW.SAV**. Then, on the **Registry** menu, click **Unload Hive**. The file **\_SW.SAV** should disappear from the **HKEY\_LOCAL\_MACHINE** data.
12. Copy D:\Winnt\System32\config\SOFTWARE.SAV to D:\Winnt\System32\config\software.
13. Reboot and continue Setup.